AMENDMENTS TO THE SPECIFICATION:

Please amend the heading beginning at page 1, line 9, as follows:

Background ~~of invention~~

Please amend the paragraph beginning at page 1, line 21, as follows:

Wireless ad hoc networks ~~are characterized in that it does~~ do not have the same static nature as an ordinary wired network infrastructure, ~~but the ad hoc based network~~ do not have a centralized control, and ~~is~~ are often created in a spontaneous manner. ~~It maintains control~~ Control is maintained through a decentralized concept. Nodes can be connected or disconnected in an uncontrolled manner as compared to standard fixed network architectures; the nodes may come and go quickly which leads to a dynamically changing network topology. In some cases such ad hoc networks are formed by user/client devices themselves as infrastructure components. These components are then truly mobile in the sense that the users move around, in and out of a network cell, and therefore the infrastructure will move around accordingly. This is an exciting way of building an infrastructure but it sets very high demands on the routing protocol.

Please amend the paragraph beginning at page 6, line 30, as follows:

In ad hoc routing protocols that ~~uses~~ use link expiration time and traffic load of nodes, the link expiration time is defined as the time interval during which the distance of two specific nodes is kept shorter than or equal to the radio effective distance. In this routing protocol, the metric is used as a cost of each link, and the node tries to find a minimum cost route, expecting that the

lifetime of such a route is longer and thus it would reduce the route update frequency and overhead due to control traffic and increase overall throughput of data packet transfer.

Please amend the paragraph beginning at page 7, line 7, as follows:

When conventional ad hoc network routing methods are used in mobile radio communication networks, some problems may arise. One problem is that since the users are mobile they will move around and the system will experience changes in the radio quality due to e.g. fading, propagation-loss, and shadowing. This is true also if the infrastructure system ~~consist~~ consists of mobile elements, e.g. if the client equipment ~~are~~ is part of the infrastructure. Even in a system with fixed wireless infrastructure components such problems may occur, for instance due to vehicles or other objects temporarily blocking the signal path between two infrastructure components, which leads to changes of the radio link quality. The main concerns for these types of problems arise when they change faster than the update frequency of the routing table or routing path changes.

Please amend the heading beginning at page 8, line 5, as follows:

Summary ~~of invention~~

Please amend the paragraph beginning at page 8, line 7, as follows:

It is an object ~~of the present invention~~ to provide an ad hoc routing method that reduces some of the above mentioned problems, by introducing a predictive routing control using link status information between infrastructure nodes.

Please amend the paragraph beginning at page 8, line 20, as follows:

Channel property information obtained from layer 1 as of the OSI network reference model is transported, together with link quality information obtained from layer 2, to layer 3 wherein routing control and traffic scheduling is located. The measured and obtained information is stored and analyzed for trends in the link quality/status between available neighboring nodes and nodes within the network area that ~~is~~ are part of the current node's routing scheme. From this the ad-hoc routing protocol decides on appropriate paths for data packets to be sent.

Please amend the paragraph beginning at page 8, line 28, as follows:

Information about the channel properties and link quality can be obtained through measurement of several different parameters. Examples of these kinds of parameters may be Doppler spread of the radio signal due to radio signal fading, a different approach for this is to deduce the coherence time of the radio signal, ~~Variation~~ variation speed of received signal, or signal to interference noise ratio.

Please amend the paragraph beginning at page 8, line 34, as follows:

The usage of this kind of predictive behavior is independent ~~on~~ of the type of ad hoc routing protocol used.

Please amend the paragraph beginning at page 9, line 9, as follows:

The ~~system further characterized in that the~~ wireless link ~~is~~ may be a transmission system based on electromagnetic radiation with a frequency in the range of 100 kHz to 100 PHz. The system even further characterized in that the transmission system is one or several of IEEE 802.11, IEEE 802.15, IEEE 802.16, HiperLAN, HomeRF, Bluetooth, IR, UWB, JTRS, 3G, GPRS, or EDGE.

Please amend the paragraph beginning at page 9, line 15, as follows:

In another aspect ~~of the present invention~~, the system ~~comprising~~ comprises a reactive ad hoc routing protocol, a proactive ad hoc routing protocol, or a combination of reactive and proactive ad hoc routing protocols.

Please amend the paragraph beginning at page 9, line 24, as follows:

The ~~system characterized in that the~~ predictive procedure for an ad hoc routing protocol ~~uses~~ may use obtained link status information and radio channel information in a comparison with determined routing anticipation criteria.

Please amend the paragraph beginning at page 9, line 28, as follows:

The ~~system characterized in that the~~ predictive model for the reactive ad hoc routing protocol ~~obtains~~ may obtain information about link status and a radio channel status from modified RREP, Hello messages, Acknowledgements, or RERR messages.

Please amend the paragraph beginning at page 9, line 32, as follows:

The ~~system further characterized in that the~~ predictive model for the proactive ad hoc routing protocol ~~comprises~~ may comprise a modified routing table containing a route status field with information about a link status.

Please amend the paragraph beginning at page 9, line 36, as follows:

The ~~system further characterized in that the~~ link status information ~~comprises~~ may comprise energy status of nodes in the network.

Please amend the paragraph beginning at page 10, line 1, as follows:

The ~~system further characterized in that the~~ link status information ~~comprises~~ may comprise number of NACK or ACK signals between nodes in the network.

Please amend the paragraph beginning at page10, line 8, as follows:

The ~~system further characterized in that the~~ link status information ~~comprises~~ may comprise information about ownership of nodes in the network.

Please amend the paragraph beginning at page 10, line 11, as follows:

In another embodiment, a routing protocol is used in a system according to above description.

Please amend the paragraph beginning at page 10, line 29, as follows:

In another aspect ~~of the present invention~~, the method acquires wireless link status information from measurements of at least one of Doppler spread, coherence time, average fading duration, signal strength or signal to interference noise ratio.

Please amend the paragraph beginning at page 11, line 26, as follows:

The ~~node further characterized in that the~~ wireless link ~~is~~ may be a transmission system based on electromagnetic radiation with a frequency in the range of 100 kHz to 100 PHz. The node even further characterized in that the transmission system is one or several of IEEE 802.11, IEEE 802.15, IEEE 802.16, HiperLAN, HomeRF, Bluetooth, IR, UWB, JTRS, 3G, GPRS, and EDGE.

Please amend the paragraph beginning at page 11, line 36, as follows:

In another aspect ~~of the present invention~~, the node is characterized in that the link status information is radio channel status information given by measurement of at least one of Doppler spread, coherence time, average fading duration, signal strength, or signal to interference noise ratio.

Please amend the paragraph beginning at page 12, line 4, as follows:

The node may be further characterized in that the predictive model for an ad hoc routing protocol uses obtained link status information and radio channel information in a comparison with determined routing anticipation criteria.

Please amend the paragraph beginning at page 12, line 8, as follows:

The node may be further characterized in that the predictive model for the reactive ad hoc routing protocol obtains information about link status and radio channel status from modified RREP, Hello messages, Acknowledgements, or RERR messages.

Please amend the paragraph beginning at page 12, line 22, as follows:

In another embodiment ~~of the present invention~~, an interlayer coordination for use in a wireless communication network comprising: a first layer comprising radio channel information acquiring means, a second layer comprising link status information acquiring means, and a third layer comprising link status monitoring means obtaining radio channel and link status information from the first and second layers, route determining means using the link status information, and routing means for routing data via determined route.

Please amend the paragraph beginning at page 13, line 7, as follows:

A method for efficient routing in a wireless network characterized in that data packets are routed using the following steps: ~~proividing~~ providing a link status information by measuring link status quality between infrastructure nodes in the network; updating a routing element with the link status information; determining a route using the link status information; routing the data packet via the determined route; and upon detection of a routing failure of a data packet, retransmitting the data packet via a different route determined using a predictive procedure using link status information of infrastructure nodes in the wireless network.

Please amend the paragraph beginning at page 13, line 16, as follows:

This and other objects, features, functions, and benefits ~~of the present invention~~ will become apparent with reference to the detailed description, which follows.

Please amend the paragraph beginning at page 13, line 21, as follows:

Fig. 1 is a schematic block diagram of some of the components and their respective role in an inter-layered concept of ~~a preferred~~ an example embodiment ~~of the invention~~.

Please amend the heading beginning at page 14, line 8, as follows:

Detailed Description~~description of invention~~

Please amend the paragraph beginning at page 14, line 10, as follows:

In Fig. 6, ~~the basic concept of~~ a mobile multihop wireless ad hoc network ~~of the present invention~~ is shown. A plurality of nodes or infrastructure elements 601, 602, 603, 604 ... 60n builds up an ad hoc network 610 together by communicating with each other and forwarding data traffic and control traffic for each other, in order to maintain the network traffic between the communicating end nodes and intermediate nodes. Sometimes one or several gateways 601 are present in an ad hoc network 610. This gateway 601 acts as a link between for example a wireless ad hoc network 610 and a standard fixed IP network 620 (e.g. Internet). The connection 600 to the standard IP network may be either a fixed line, using for example an Ethernet network, or a fixed wireless connection using for example LMDS or "Mini-link" systems or similar technology.

Please amend the paragraph beginning at page 23, line 31, as follows:

It should also be noted that even though a wireless ad hoc network has been illustrated in the ~~preferred~~ example embodiment the same concepts may be applicable to a wired network or fixed wireless network.

Please amend the paragraph beginning at page 23, line 35, as follows:

Although the ~~invention~~ technology has been described in detail for the purpose of illustration, it is to be understood that such detail is solely for that purpose and that variations can be made therein by those skilled in the art without departing from the spirit and scope of the ~~invention except as it may be limited by the~~ claims.